The politics of feral horse management in Guy Fawkes River National Park, NSW

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ABSTRACT

This paper analyses the complex social and political dynamics of feral horse management policy in Guy Fawkes River National Park, NSW, and also suggests ways in which it might be made more effective. Cultural, historical and ecological dimensions of horse management are examined through an analysis of the government-led decision-making process, since an aerial cull of horses in October 2000. The paper focuses on challenges of effective community involvement when top-down management processes (e.g., centralized decision-making by government) are imposed. A key question addressed in this paper is who should be the final arbiter and by what process should decisions be made? The paper shows that it is the processes of social interaction in decision-making that determine substantive outcomes, rather than technical scientific details about ecology or biology. Several weaknesses in decision-making were identified. First, inadequacy of community consultation workshops for achieving genuine stakeholder input and satisfaction. Second was a well-intentioned public consultation that resulted in management policy being oversold in support of special interest groups. Third was over-reliance on traditional science which proved ineffective in resolving this value-laden conflict. Improvements in decision-making and management policy can come from using a "policy oriented" approach that brings a systematic focus on complex, interactive ecological, social, political and economic dimensions. Recommendations to improve the decision-making process are offered, including alternative means for community consultation, better integration of science with values, and keeping decision-making power localised (and strategies for doing so). It can be reasonably expected that these recommendations can improve management policy, with a minimum of additional resources.

Keywords: Feral horses; public consultation; community involvement; decision-making process; common interest; policy orientation; problem definition.

Introduction

Australia has the largest population of wild horses in the world, with over 300,000, mostly in central Australia (Dobbie *et al.* 1993). In NSW there are between 5,000-8,000 feral horses (English 2001b). The NSW National Parks & Wildlife Service (NPWS or the "Service", now the Parks & Wildlife Division of the NSW Department of Environment & Conservation), has jurisdiction over national parks and a legislative responsibility to minimise impacts of horses within its reserves. The issue of feral horse management in the highly urbanized state of NSW suddenly hit the broader public's "radar screen" in October 2000, when the Service undertook an aerial cull of 606 horses in Guy Fawkes River National Park (GFRNP) from helicopters. There was widespread public reaction to the cull, with significant media coverage. Four years later the management of feral horses is still a largely unresolved and contentious issue. The problem of feral horses in national parks is not just an ecological one but a policy problem with a significant social and political dimension, and should be framed and addressed as such. As described by Nie (2003), some natural resource-based conflicts are 'wicked', as distinct from 'tame' policy and planning problems, in that they go beyond techno-rational and scientific analysis and methods of problem solving. Feral horse management in Australia undoubtedly falls in the 'wicked' category - a value-based conflict grounded in competing deep-core human values.

This paper describes the process of developing a management plan for those horses remaining in Guy Fawkes River National Park since the aerial cull. It also describes the social context for decision-making about horse management, analyses the decision process, and makes recommendations. The analysis is guided by the framework of categories used in the policy sciences approach to orient to problems by mapping their inherent social and decision-making processes (Lasswell 1971; Clark *et al.* 2000a,b,c). This analytic framework constitutes a "stable frame of reference" for examining a complex flow of events, both systematically and comprehensively. Social processes are very complex but rather than avoid or deny complexity, the framework seeks to organise information about it in manageable, rational ways to improve problem solving. The analysis includes all stakeholders - those people who produce the policies and programs and those who are affected by them. This tool helps observers and participants better understand the range of disparate interests (i.e., special and common or shared interests) at stake in any issue. Brunner *et al.* (2002) discuss the concept about "interests" and the methods used here. The methodological approach taken here also permits a more "objective" assessment than is otherwise possible using only conventional analysis.

This approach encourages common interest outcomes, with the common interest defined as a blending of interests or compromise that most stakeholders accept or can live with. Good policy embodies the common interest. Single-interest issues make it very difficult to achieve the common interest in the policy process, with "… groups … lobbying for more of whatever it is that their members want, generally at the expense of non-members" (Rauch 1994, p.47). "Whatever their members want is likely to be much narrower than the common interest" (Brunner 2002, p.27). The common interest is different from the sum of interests that comprise the public interest (some are invalid due to being financially or physically impossible, such as using fertility control to manage horses in vast and inaccessible national parks) - the common interest is "not an eternal truth, but a social construct that evolves over time" (Brunner *et al.* 2002, p.16).

My own standpoint on horse management and the decision-making process is largely shaped by my experience as an ecologist with concern both for the welfare of the horses and for the protection of national parks. Having assisted in developing a report on the future management of feral horses in national parks subsequent to the cull (English 2001a), I have read the public submissions to the inquiry into the aerial cull and collected a large file of newspaper coverage of the cull. Other sources of information used in this analysis include: reports on the aerial culling of horses in the GFRNP and the future management of horses in the GFRNP and parks elsewhere in NSW (English 2000, 2001a,b); a report by the Heritage Working Party (2002); Draft Guy Fawkes River National Park Horse Management Plan (2003), and communications with those directly involved. This analysis covers the time period from the aerial cull in 2000 until the implementation of the new horse management plan in 2005.

The problem and its background

This paper addresses the problem of finding and securing a horse management policy in the common interest. Two key trends relating to this problem are the changing circumstances for management of the horse population in the area, and how decisions have been made about their management. These two trends are briefly discussed below, followed by a more complete problem definition.

History of horse management in the Guy Fawkes area. It is believed that horses have been present in a wild state in the Guy Fawkes area of northern NSW since the mid-19th century. Horse numbers were kept low by local landowners, mostly by shooting. In 1972 the valley was purchased by the NSW government and declared the Guy Fawkes River National Park (now 100,000 hectares), and all cattle and horses were removed from the valley in that year. Horses continued to be managed on surrounding lands by some private landholders, and in later years some of this land was purchased and added to the Park. After creation of the park, there was no management of the horses for 20 years, during which time horse numbers built up to levels not accurately determined by survey. The park is very inaccessible due to rough terrain and escarpments. From 1992 until the cull in 2000, 156 horses were captured and removed from the park by local horsemen and NPWS staff using trapping and mustering, and there were a number of horses killed and injured in the process (English 2000). English reports (2000) that "even for those that survived it was very stressful, especially in the way in which the newly trapped horses were handled and taken out of the valley". Control efforts over these eight years were unable to keep horse numbers in check, with efforts focused (due to inadequate resources) on developing capture and removal techniques that could be applied in remote and inaccessible locations, and reflecting lack of knowledge of horse numbers and of population dynamics, as well as inadequate resources.

Decision to aerial cull the horses. As reported by English (2000), there were plans put forward by NPWS in September 2000 to continue with mustering and trapping, but using vehicles to truck horses out. However, conditions in the Park as a result of drought and bushfires became so severe that helicopter shooting was considered for the first time. Severe bushfires had burnt out some 60% of the Park from early September, and increasing numbers of horses were seen along the Guy Fawkes River by helicopters involved in firefighting. The horses were noted to be in very poor condition. An aerial survey was conducted by experienced NPWS staff in October, with 283 horses counted and a number of dead horses were seen. Detailed planning for an aerial cull of the feral horses in GFRNP began on 19 October, using the Incident Control System to develop a plan, determine and allocate resources and to monitor the effectiveness of the operation.

The shooting was done over 3 days starting on 22 October, using a total of 3 helicopters and 3 teams of shooter and navigator. The navigator's duties were to use the GPS navigation system to ensure that all shooting was done within the Park boundary, to assist in the process of ensuring that every shot horse was dead and to plot the location and number of horses shot. A total of 606 horses were shot.

A significant oversight of the Service was to undertake the cull without firstly notifying or consulting the RSPCA or the local community, and attempting to garner their support. A local landowner, who had long been involved in mustering with the Service and used the horses as a resource, claimed he had heard the shooting. He rode in to the park to investigate shortly after the cull, found the shot horses and notified national media outlets. The cull received significant national and international media attention and was reported with widespread condemnation, despite there being many in the community who supported the Service action, including neighbouring landowners who had long suffered from horse incursions onto their land. "It started with the local landowner and Channel 9 and the issue ran from there. … Proof went out the window." (English, quoted in The Daily Telegraph, 2000).

The problem defined in more detail. The absence of community consultation during the decision-making process about whether or not to do aerial culling, proved to be a significant oversight of NPWS. One can understand that such consultation would have been difficult and contentious and would have introduced delays into the horse management effort at a time when urgent action was needed. However, lack of public consultation led in large part led to the problem which NPWS found themselves with – public dissatisfaction with management. In an effort to build public support for the Service, yet contrary to the recommendations of an inquiry into the cull (English 2000), aerial culling of horses in NSW was banned. The ban is seen by many as a political reaction to an intense media campaign, and as an effort to satisfy the vocal opposition to the aerial cull in October 2000. It was also the conclusion of a community-based steering committee formed to develop a horse management plan for Kosciuszko National Park in southern NSW in 2002, that the community at large will not sanction the shooting of feral horses from helicopters. Environmental groups have called for reversal of the ban. Within the horse steering committee for GFRNP there were differing views about the humaneness of aerial culling. The majority of the steering committee supported the aerial cull as well as continued control of the horse population by shooting. However, because aerial culling was no longer a viable option, the ban was not a subject for discussion by the committee.

Social context of the problem: participants and their perspectives

There are now numerous individuals and stakeholder groups involved in management of feral horses in GFRNP. This section describes their perspectives. People's perspectives are made up of their *identities* (i.e., who or what they identify with or value), *expectations* (i.e., set of expected outcomes), and *demands* (i.e., what they want) (Lasswell and McDougal 1992). People may share a group identity due to shared values, but have different expectations or demands, or may have similar expectations and demands but have different identities or values (Flores and Clark 2001). These distinctions are clearly seen in regard to feral horse management, where for example, the horse protection lobby has different values from some of the local farmers, yet share the same expectations and demands that some horses should remain in the national park. The values, expectations and demands in relation to the horses, the park, and management issues vary significantly between participants. Eight of these perspectives are outlined below.

Horses are special. Horses are widely regarded as a highly valued species, and horse protection groups in particular object strongly to them being labeled as 'feral' (e.g. www.savethebrumbies.com). The high level of public interest and concern means that the political influence over feral horse policy is significant, and the media plays on this and fuels the conflict over differing demands and expectations. While the aerial cull of horses received public condemnation, a subsequent aerial cull of 3500 feral pigs in the Walcha area received no word of complaint (while all animals are equal, some are more equal than others).

Horse populations in national parks need to be controlled. It is of universal agreement, including by those most opposed to the aerial cull such as horse protection groups, that horse numbers in national parks need to be controlled. However contention arises due to conflicting demands and expectations over *how* the horses should be controlled, and the level of control (all or some). Most ecologists, the Service, and many local landholders, view that an attempt should be made to remove *all* horses from the park, while others view that a small population should be allowed to remain in the park.

A small population of horses should remain in the park. Horse protection groups and some neighbouring landholders believe that a small population of horses should be allowed to remain in GFRNP. While motivations differ between the horse protectionists who feel horses are special, and some local landholders who see them as a resource, both groups are calling for the same outcome. In the 70's and 80's, and probably prior, horses were let go in the park for breeding, and the tradition of regarding the horses as a private resource developed (A. Jackson, Armidale, pers.comm. 2004). These neighbours therefore have a vested interest in maintaining a population of feral horses in the park, since they have for a long time been able to remove horses from the park for their own use.

All wild horses should be removed from the park. The Service, and many ecologists and environmental groups, support eradication of horses from the parks, based on the principle that national parks are not places to be keeping exotic species, and because they cause ecological damage. Those holding this view are also mindful of the fact that without eradication, the ongoing resources, costs, and horse welfare considerations, will be of a high order to keep horse numbers at a manageable and environmentally acceptable level. The local rural community is divided on the issue of horse numbers in the park. Those with practical experience and no vested interest in maintaining a population in the park, support eradication of the horses from the park, and regret that all of them had not been shot in the aerial cull.

Horse welfare is paramount. Concern for horses' welfare can be considered a universally shared value, while the point of contention is what methods of control are considered to be the most humane. This issue forms the basis of the conflict over the aerial cull. Many stakeholder groups (environmentalists, the Service, and many local landholders) believe shooting, in particular from a helicopter, is the most humane form of control, while others (horse protection groups and some members of the public) are horrified by it, with visions of Rambo and helicopter gunships. Probably the most significant unresolved issue is whether or not horses should be shot – many find this completely unacceptable, while others believe it is the most humane and the only practical and realistic option for controlling horses in inaccessible terrain of protected conservation areas such as found in Guy Fawkes.

Fertility control is the solution. A view commonly held by animal welfare groups is that fertility control is the logical and humane solution to the problem of horses impacting national parks. However, as detailed in English (2001b), fertility control is only feasible in Australia where there is a small contained and accessible population which can be readily approached and handled for injection or implantation, and therefore is not feasible for horses in our large national parks. The financial expense and effectiveness of the currently available fertility control options remain inhibitory in using this method, although there have been recent developments in the United States in the delivery and effectiveness of fertility control techniques.

The creation of the national park is the problem. The expectation that some horses should remain in the park may be related to the landowners' feelings of resentment toward the creation of the national park in the first place (Jarman 2001). Some local landholders in the Guy Fawkes area still do not accept that there should be a national park there, nor that its being a park should alter previously accepted land-use practices. They see the park as "theirs", and believe that prior to the creation of the park, the horses were appropriately managed (Jarman 2001). In short, they believe that the problem is not the horses, but the change in land tenure (Jarman 2001). However, this perspective is held by an increasing minority in recent years, with the park viewed as an asset for the region as locals begin to see the economic benefits of the tourist dollar for agriculturally unproductive land. Nevertheless this broader context of the role and location of national parks and who should make and participate in making decisions about what happens within the parks, is a significant issue underlying many wildlife management conflicts. Many private landholders (farmers) contend that protected areas are the cause of feral animal problems because they harbour populations of these animals. Rural press coverage endorses this view: "… national parks where they just hide, breed and destroy" (The Land p 16, 2001); "wilderness areas … to lock up and develop into feral animal and noxious weed breeding centres" (Cooma-Monaro Express p 8, 2001). This attitude is central to the anti-national park stance taken by some farmers, which relates to the broader issues of landuse and land ownership.

Wild horses in NSW have heritage value. Demand for protection of the horses based on their 'heritage' status has come both from the horse protection lobby and from those locals who call for maintenance of a small population within the park. Claims that the horses have heritage value are based on their being sent overseas for use in wars from the 1830's, and these claims were raised at a community workshop held soon after the aerial cull, and have become instrumental in determining the future plan for management of the horses. "Horses have served this country faithfully since European settlement, and their value to this country's survival in the early colonial days and its historic development cannot be challenged" (Heritage Working Party 2002). However, the view that the horses have heritage status is not universally shared, with many stakeholders (including members of the local community, the steering committee, and environmentalists) not placing any value on heritage significance, and a member of the steering committee viewing it as "nonsense".

In summary, while there are various shared values among participants, the two main points of conflicting demands and expectations were:

Preserve the horses. Supported primarily by the horse protectionists (who demand that no horses be culled) and those local farmers who want a horse population maintained, and have used heritage status to support their demands; and

Preserve the ecosystem. Supported primarily by local farmers, ecologists and environmentalists who want horses removed from the park, and see culling as the only practical way of achieving this in the long-term. On the surface these two sets of demands are mutually exclusive.

Analysis of the decision process

Decision-making in this case is about the future management of horses in the national park. Decision-making is a continuous process, not a fixed point in time or a single decision by an identified decision maker. The best way to understand this process is in terms of its inter-related activities, functions, or stages (outlined by Clark *et al.* 2000c): planning (intelligence), promotion (open debate and recommending), prescription (setting guidelines such as management plans), implementation, appraisal (review), and succession or exiting (terminating) the management policy prescription. These activities are often carried out in this order, but often depart from this sequence. In actual decision-making typically several of these functions are ongoing simultaneously. This section examines the horse management process through this functional decision-making lens. It also uses the standards of decision-making recommended by Lasswell (1971: 86-97), as presented in Table I along with a chronology of decision making steps. It is this decision process that must be upgraded in order to achieve feral horse management policy in the common interest.

Planning (intelligence)

The planning phase, which extended over three years, consisted of several major activities, as listed in Table 1.

The first stage of planning included an independent scientific inquiry. After the public reaction to the aerial cull, the State Minister for the Environment (the 'Minister') immediately called for an independent inquiry by a veterinary scientist into the cull (English 2000), as well as into the future management of free-ranging horse populations in GFRNP and national parks elsewhere in NSW (English 2001a,b). The inquiry concluded that the cull was carried out humanely under approved protocols, and was the most appropriate course of action given the circumstances of drought and the inevitable suffering of the horses from starvation had they not been shot. The *Model Code of Practice for the destruction or capture, handling and marketing of feral livestock animals 1991* (Senate Standing Committee on Agriculture) states that shooting horses from helicopters is the only practical method for quick, large-scale and humane culling of large animals in inaccessible locations. This view is shared by the Australian Veterinary Association and the NSW

Table 1. Timeline and standards of key decision making steps.

Date	Decision phase	Standards
Oct 2000	Aerial cull of horses	
	Planning/intelligence	
Nov 2000	• Independent inquiry into the aerial cull	Dependable (factual)
Feb 2001	• Community workshop in Dorrigo	Comprehensive (complete)
2001	• 2 reports on future management of feral horses in national parks (English 2001a,b)	Selective (targeted)
2001	• Heritage Working Party	Creative (in finding facts)
2002-03	• GFRNP Horse Steering Committee	Available (to everyone)
	Prescription	
Nov 2003	• Draft Horse Management Plan	Effective (expectations)
	• Public consultation in Guyra	Rational (balanced)
		Inclusive (includes all)
		Prospective (future-directed)
	Implementation	
2003	• Guy Fawkes Heritage Horse Association (GFHHA) formed	Timely (prompt, open)
Apr 2004	• Horse capture efforts begin	Dependable (facts)
		Rational (common interest)
		Non-provocative
		Effective (works in practice)

Source: Standards from Lasswell 1971; Clark 2002

Pest Animal Council (which has RSPCA membership), providing that the shooting is always done by trained and accredited personnel operating under strict FAAST (Feral Animal Aerial Shooting Team) guidelines as a part of a government pest control program. In NSW this training is conducted by teams of instructors drawn from the NSW Police Service, NSW Agriculture, the Rural Land Protection Board and the NPWS (further details in English 2000). The main advantage of aerial shooting is that shooters can readily locate and get close to the animal for an effective shot, and any wounded animals can be followed up and quickly killed with additional shots. There is however national and international concern with the large-scale aerial shooting of horses, and some animal welfare groups and horse protection groups are strongly opposed to the use of aerial culling as a means with which to control feral horses. The RSPCA prosecuted the Service for cruelty to horses, focusing on the case of a mare found alive a week after the cull, despite having been hit twice by shots into the correct target zone. The court judgement in July 2002 dismissed allegations of cruelty.

Planning also included a community workshop, hosted by the Service in Dorrigo in February 2001, to consider local community opinions on the management of horses in the GFRNP. The workshop was attended by 25 people who were invited based on their local knowledge and the skills and experience they had to offer. The objectives of the workshop were to establish a clear picture of local community issues on the management of horses in the park, and to establish what the local community sees as suitable methods to reduce the number of horses in the park without using aerial shooting. According to an ecologist from the local university, while the initial argument in response to the cull was based on cruelty to horses, the workshop debate rapidly moved on to the argument that not all of the horses should be moved from the park (P. Jarman, University of New England, pers. comm. 2004). One outcome to emerge from the workshop was a lack of consensus regarding problem identification, with private landholders neighbouring the park viewing the problem of feral horse management as being directly related to the change in land tenure, and not an ecological problem (Jarman 2001). The workshop revealed the depth of feeling in the attitudes held by people toward horses, and a single workshop was insufficient to address the objectives beside people's need to express their response to the cull. The workshop was considered by some to not be very productive, and to be a partial and inadequate approach to determining what the community wants, with landholders not ready to discuss future options for management (Jarman 2001, Northern Regional Advisory Committee 2001). Nevertheless the workshop was at least the necessary first step required in the community involvement process. It may have been more realistic to view this first workshop solely as a "de-briefing" about the cull, and a second workshop scheduled for soon after to address future horse management options.

Both the scientific inquiry and the workshop focused on goal clarification. Each examined what the goal of management policy should be and this was in part based on whether or not the horses have heritage value.

In response to claims made at the community workshop that horses in the Guy Fawkes area have heritage status, the Minister announced in 2001 the formation of a Heritage Working Party (HWP) (following a recommendation by

English 2001b). The role of the working party was to assess the claims of heritage status and historical values of horses, as put forward by some neighbouring landholders along with horse protectionists. This in any case was these particular landholders' public stance - that horses have "heritage" value and so should be left ("so have rabbits and blackberries but nobody pushes for their retention" - Jarman, 2001). However, the vested interest in maintaining a population of horses in the park was likely to be an underlying factor for neighbours in pursuing claims of heritage status. The working party comprised five local community representatives who had an acknowledged involvement with, and an interest in the history of horses in the GFRNP, a representative from the Waler Horse Society and a member appointed by the Service, and a geneticist from the University of Sydney. The Minister indicated that should the horses be found to have genuine heritage significance, they would be humanely removed from the park so that they can be managed properly in another location by people with an interest in their heritage value. Claims of heritage status are based on the belief that horses in the Guy Fawkes area are part of the "Waler" legend, horses from New South Wales which were sent overseas for the remount trade for over a 100 years from the 1830's (Heritage Working Party 2002). In WWI the Walers performed with distinction as the Australian Light Horse, excelling in desert warfare, culminating in the charge on Beersheba, the last great cavalry charge in history. Even though a genetic basis for the heritage value of these horses could not be demonstrated, the reasons given by the HWP for the significant heritage value of the horses, sufficient to warrant their being managed on this basis were: their importance in the cultural history of the Guy Fawkes area; their special association with a group of persons of importance in the cultural history of the GF area, namely the Light Horse regiments; their strong association with some sections of communities in the GF area; their importance in demonstrating the principal characteristics of an item of significant national cultural heritage, namely the brumby. It was concluded by the HWP as unacceptable that the population not be maintained (HWP 2002). The new management plan for horses in GFRNP has subsequently been developed acknowledging this outcome of the HWP.

The conclusion of the Heritage Working Party led to the establishment of the GFRNP Horse Steering Committee, a local community-based committee formed by the Minister to assist the Service in preparing the horse management plan for GFRNP. The role of the committee was to provide advice on the assumption that horses were to be removed from the park. The committee included representatives from the heritage working party, RSPCA, veterinarians, experienced local horse handlers, local landholders, local horse interest groups, NPWS Advisory committee, Rural Lands Protection Board, local Aboriginal Land Council, and the NPWS. The committee members, while holding a range of different perspectives, were able to have productive discussions (A. Jackson, Northern Tablelands Advisory Committee, and GFRNP Horse Steering Committee, pers. comm. 2004). Discussions included the option of ground shooting, given that aerial shooting was no longer an option. The number of horses that should be allowed to remain in the park was discussed only briefly, given that the government's position, as mandated by the Minister's public comments, was that horses must be removed. The prospect of a small number being allowed to run free was addressed, as was creation of an enclosed sanctuary in the park. For the reasons already discussed above (difficulty and cost of managing a herd and keeping numbers to an agreed level, and ruggedness and size of the park), maintaining a small herd to run free was not seen as a viable option.

Another public consultation was held in Guyra in 2003 to discuss the draft management plan but was poorly attended and therefore of little value. The draft plan was also put on display for public submissions.

Promotion

The promotion function of decision-making is the mobilization of support for particular policies. In the process of attempting to mobilise public opinion in favour of the Service's policies, certain values were promoted and dismissed. Veterinary knowledge and practical experience tended to be overlooked in favour of less well-informed public sentiment for the welfare of the horses, represented by the ban of any further aerial culling of horses. There was little, if any, constructive open debate, with this being stifled by an intense media campaign and polarized opinions. Media coverage mostly highlighted the animal welfare issue (not using supporting facts from the inquiry), raising strong opposition to the cull from the broader community. While the landholder who raised the alarm had been working with NPWS over the years in trialing capture techniques for the horses in the park, he was opposed to aerial culling. His bias was then promoted by the media. A popular NSW radio broadcaster took firm opposition to the cull of feral horses in Guy Fawkes, and gave the issue much airtime including a personal attack on the veterinarian who conducted the inquiry.

Prescription and Implementation: The Horse Management Plan

The steering committee was involved in the development of the plan, and in deciding on the appropriate consultation procedure with the local community and in the decision to release the final draft plan. Responsibility for final writing of the draft management plan was taken by the Service, with the role of the steering committee concluding at this stage.

Management goals

The goal statement in the draft Horse Management Plan for GFRNP (November 2003) was: (i) To conserve and protect the natural values of the GFRNP by removing horses and to ensure the park remains free from horse impacts; and (ii) To provide for the humane capture, handling and removal of horses from the park and identify options for the appropriate management of the horses once removed from the park.

Given that development of the management plan was precipitated by public concern with management of the horses, a goal of gaining public support for feral horse management policies in GFRNP seems important. While there was considerable effort to involve the public in the development of the plan, the plan itself does not explicitly state a goal of increased public support for horse management policies. Overlooking this goal in the plan reflects the lack of comprehensive problem definition as a first step in developing the plan (discussed further on). The plan took horse impacts and horse welfare as the two aspects of the problem to be addressed.

The draft plan does not allow for any shooting of horses, with horses to be removed from the park using the most humane practices possible, without culling. Ground shooting is only to be employed for euthanasia of injured or very ill horses. The horse protection group is adamant that shooting should not be referred to in the plan at all, and claim the plan contains "a lot of inaccurate and misleading information" (www.savethebrumbies.org/news.htm).

Capture efforts

As of April 2004, when capture efforts began under the new management plan, current horse population estimates in the park ranged from 150-300. Based on knowledge of population growth rates (English 2001b cites up to 20% per annum), the projected population size in 5 years time is 600 if there is no control. The plan proposes the removal of all horses from the park over 5 years. Based on a maximum estimate of numbers of 300, this means removing 78 each year to bring the population down to 0-5%. In June 2005, NPWS reported that 114 horses had been captured in the last 12 months. On this basis, NPWS expect to remove at least 100 horses per year for the next 3-5 years.

Many experienced local landholders and members of the steering committee believe it is impossible to get all of the horses out without culling, and the view that there should be no shooting was not a majority view within the steering committee. Many members of the committee were of the opinion that horses which, for one reason or another, were considered unsuitable for domestic use following removal from the park, should be culled within the park. They strongly believed that subjecting such animals to stresses of capture and transport, only for them to be subsequently destroyed or consigned to the abattoir, was unacceptable.

Kosciuszko National Park (KNP): The Wild Horse Management Plan for KNP prepared in 2002 by NPWS and the Kosciuszko Wild Horse Management Steering Committee, similarly details capture and removal techniques to be trialed, with no culling of horses, and maintenance of a population of the captured horses outside the park. A significant difference between the two parks however, is that much of KNP is more accessible with large areas of open land and it is much easier to locate the horses. Capture and removal is therefore more practical and may impose less suffering on the horses (although this would not be the case for some parts of KNP).

The draft plan briefly addresses future management options for the horses outside the park. The plan enables people interested in breeding and conserving feral horses to provide homes for horses removed from the park. The Guy Fawkes Heritage Horse Association (GFHHA) was formed on the basis that those who demanded that the horses should be protected because of their heritage status, should themselves hold responsibility for their care once removed from the park. The Association charged with the responsibility of finding homes for the horses once removed from the park, has begun the search for suitable feral horse sanctuaries where the horses can be kept in a wild state, and is looking for funding sources that may finance such sanctuaries. Private ownership via a horse adoption system is being pursued (www.savethebrumbies.org). The Association will oversee the development of a "Wild Horse Register" to enhance the value of the horses removed from GFRNP and other wild horses Australia-wide.

As pointed out by English (2001b, p. 5), the "hard realities" of removal of horses from national parks "go beyond a detailed consideration of the technical pros and cons of undertaking a feral horse mustering or trapping program … and must start with an understanding of the possible fate of feral horses that are captured in this way". The terms of reference for the Heritage Working Party were not to address this key issue but to focus on the heritage value of the horses. The subsequent management plans for both Guy Fawkes and Kosciuszko focus on the pros and cons of capture, but should give more attention to the possible fate of the horses after capture.

Since implementation of the new management plan, the early enthusiasm for establishing a sanctuary has not been followed through with matching volunteer support and donations. The Horse Heritage Association is now calling for the government to provide the funding for the sanctuary, claiming that the Minister has "passed the buck" to the Association, and that if the Minister "wants all horses removed then it is the responsibility of the Minister and NPWS to ensure that those Heritage horses have somewhere to go" (www.savethebrumbies.org/news.htm May 2005). The basic position of the Association was that if the government won't pay for a sanctuary outside the park, then the government should let the horses stay in the park.

In June 2005, the NPWS called for expressions of interest from incorporated organisations to take possession of horses removed (http://www3.environment.nsw.gov.au/npws.nsf/Content/tender_050708_wildhorses). Of the horses captured, only 30 remained unsold (these are being privately cared for), and most sold for between $300 and $1000 (SMH June 2005).

Of the 156 horses removed from the GFRNP in the 1990's, some have become riding horses, and others pets. Many however were not valued in this way (e.g. because of age or wildness) and were destroyed or sent to an abattoir. This has also been the case in horse programs in the USA and New Zealand where horses end up being destroyed or sent to an abattoir because they are not valued due to their age, poor conformation, or wildness. The reality is that the majority of the horses captured from GFRNP will not be suitable for sale (English pers. comm. 2004). There is only a finite market for riding horses, and that market will choose the best and most suitable.

"The fact is that a majority of captured feral horses will be transported to abattoirs for slaughter for pet food, and those in the community who are passionate advocates of mustering rather than shooting should at least think about the animal welfare implications of that approach" (English, 2001b, p.5).

Appraisal of the decision making process

Issues addressed below are (i) the inadequate problem definition and limitation in goal setting, (ii) the decision on heritage status, (iii) the influence of science, politics and the media, and (iv) top-down government decision-making and a weak community engagement strategy. All these elements proved to be problematic in the feral horse decision-making process.

Problem definition and gaining consensus between interest groups

Different perspectives see different problems, and how we define the problem shapes the solutions. It is quite clear in detailing the planning phase, that different participants had different definitions of the horse management problem. This difference is a reflection of their different value outlooks and goals. For example, definitions of the problem included (i) the presence of horses in the park, (ii) the welfare of the horses (the perceived cruelty of aerial culling), and (iii) public dissatisfaction with management of national parks. Intelligence gathering focused initially on the welfare aspect of the problem (with the conclusion of the inquiry that the approach taken was the most humane), then on the heritage status of the horses, and finally on methods for capturing horses to remove them from the park (meeting the standard of targeted planning – as in Table 1).

The lack of consensus on problem definition to begin with is commonly seen in natural resource management, in the haste to implement solutions. Policies arrived at through incomplete problem definition tend to perpetuate the historical antipathy and 'blame game' between agricultural and protected lands. A thorough problem orientation should include all perspectives and all definitions of the problem (as demonstrated by Primm and Clark 1996, and Scheuer and Clark 2001). Comprehensive orientation of a problem addresses its array of socio-cultural, ecological, economic, and political factors. Shooting of horses from a helicopter precipitated the problem of a media campaign and public outrage. The factors which, when combined, necessitated the shooting were difficult terrain, drought, fire, and lack of prior horse control. The draft management plan took the problem to be the remaining presence of horses in the park (about which consensus was not reached), and what should be done about them, which led to focusing debate on the most humane methods to remove as many horses as possible from the park.

Intelligence gathering was not available to everyone (refer standard in Table 1), with specific people being invited to contribute and participate. More creative community participation strategies in the first place may have helped in reaching consensus in defining the problem, with a resultant higher consensus over the prescription (the management plan). Having a first goal of developing policies and a horse management plan with a high level of community support, may have helped to focus attention of the steering committee on a process by which stakeholder and community support could be engendered. This may have enabled a more effective community engagement process, including more promotional activities by the Service, such as raising public awareness of the complexity of the issues and the long-term implications of management decisions.

Heritage value and horse sanctuaries

The decision about heritage value and the plan to create a horse sanctuary has proven to be problematic. How legitimate or helpful in terms of finding the common interest, are claims of heritage value, and how genuine are they in view of vested interests? The decision to assess heritage status was taken in the spirit of allowing the range of community views to be heard. Yet the effect of this decision, with confirmation of local heritage significance despite there being no genetic basis for it, and receiving the support of a minority of the stakeholders, was to set a precedent that the management plan must allow for this heritage value. Declaration of local heritage significance has long-term ramifications, and has possibly opened up a new 'can of worms' in establishing and maintaining a horse sanctuary. If heritage value had not been given such a high priority, then a wider range of management options would have remained available, and perhaps a larger proportion of the community been satisfied (then meeting the common interest standard for implementation in Table 1).

Other standards for implementation (timely, non-provocative, dependable, effective) were not well met. The delay in implementation of any further horse control in the park from October 2000 until April 2004 has serious consequences for the likely success of removing the population from the park. The likelihood of being able to remove 95-100% of the horses without any culling is questionable based on past horse management programs, with experienced locals claiming there is "zero chance of success".

Some members of the GFRNP steering committee share grave concerns as to the welfare and management of the horses once removed from the park, and lack confidence in the capacity of the Horse Heritage Association to undertake this. The United States' horse adoption program managed by the Bureau of Land Management (BLM) provides a cautionary tale regarding horse sanctuaries. There was a wild horse population explosion in the U.S. 20-30 years ago in the absence of natural predators (e.g. pumas, wolves, and grizzly bears), and in the American West there is an estimated 40,000 feral horses, known locally as mustangs (English 2001b). The numbers of horses captured and put into sanctuaries for adoption in the U.S. under the Wild Horse and Burro Program is in the order of 30,000 per year. The BLM now has a bureaucratic nightmare on its hands, with allegations of corruption and ongoing conflicts and abuse directed at the BLM for mismanagement. While the numbers of wild horses put in sanctuaries for adoption in the U.S. are of a much higher order than in Australia, given a maximum potential population increase of 20% per annum, in the absence of buyers, the numbers could build up in captivity to create a significant management issue.

Demands by the Horse Heritage Association that the government should fund the maintenance of the horses once removed from the park, shows an unwillingness of the horse protection stakeholder group to reach a compromise, despite the government making a significant effort to meet their interest. There has been continued pressure on the Minister, from those associated with managing horses removed from the park, to allowing the building of a sanctuary within the park itself. This is a clear move to shift the responsibility for the establishment, funding and maintenance of a sanctuary to the NPWS and thus the taxpayer. It would also place impossible management responsibilities on NPWS staff. It was seen by some members of the committee that failure of the self-appointed task by the Horse Heritage Association to place horses as they are removed from the park would seriously compromise the whole operation.

Other unresolved aspects of implementation include the issue of accountability and who is responsible for the horses captured from the park including their ultimate fate. What will be done with the horses if there is not enough funding to support them in a sanctuary or if homes are not found for them? Who will bear responsibility? What impact will recognition of local heritage significance really have, in terms of interest in buying the horses based on their heritage value? Are they the sort of horses that people want as riding horses? Can they compete in the market for horse breeds? Will fertility control be considered as an option in the sanctuary?

Science, myths, politics and the media

Apparent in this case with such strongly held beliefs and perspectives were the over-riding influence of a cultural icon, politics and the media, and the lack of influence of science. These influences proved problematic in the horse decision process and are discussed below.

The deployment of myth or cultural icon as a strategy to achieve a desired outcome is not uncommon. The debate over dingoes as either passive wilderness icon or dangerous rogue icon is one example, which is simplistic and fails to serve the dingo effectively or acknowledge the complex historical relationship between dingoes and humans (e.g. Healy 2005). Another is the recent debate about alpine cattle grazing in Victoria, where the debate becomes one of culture and myth and not of environment or economics: "Key questions of environmental protection and the economics of allowing grazing to continue have become lost in the mountains as the ideologues gather for the fray. The battle has become one of bush myth and iconography" (The Age 2005). In this case, contrary to the advice prepared by his department, the Federal Environment Minister intervened by initiating a process that could see the droving and grazing of cattle in the high country given emergency protection as a heritage activity. "The imagery of horse, rider, Akubra and Driza-Bone is irresistible to the media. The best the environmentalists can offer are a few wildflowers and some sodden peat bogs…..Forget the science or regard for the environment as something other than a resource to be exploited. The debate has been reduced to a level at which anyone who disagrees with the mythology can be tagged with the catch-all of 'un-Australian' " (The Age 2005). This story has many overlaps with the feral horse story, for example, Minister intervention to protect heritage and support national myth, and environmentalist and scientific viewpoints having minimal influence.

The role of expert scientific advice in the decision process was insignificant, as demonstrated by the policy ban on aerial culling contrary to the recommendation of the independent scientific inquiry. The recommendation of the inquiry was over-ridden in an effort to meet what was seen as the 'public interest' (portrayed and encouraged through the media and not representing the 'common interest'), in banning further aerial culling of horses. The Minister said that "despite the weight of scientific evidence supporting aerial shooting, he had listened to the community on this issue" (*Daily Telegraph* Nov 17, 2000). Science has more influence in cases where values are not so strong. The political arena weighs up values and beliefs, resulting in decisions that are mostly based on these considerations. "Policies are really questions masquerading as answers" (Gunderson 1999, p.2), and in general can be said to represent compromises between conflicting values. In this case, this was the working approximation of the common interest. The policy banning aerial culling of horses in national parks in NSW can be seen to symbolise the fact that management of feral horses is an unresolved issue, and is certainly a compromise but perhaps not a very effective one. The challenge is for policy to find solutions in the common interest, and not to exacerbate conflict, and here adaptive policy learning is important, where policy adapts to new knowledge, with informal, reflexive adjustment in response to feedback (Eckersley 2003). This policy meets the interests of some animal welfare groups and the goal of certain members in the media. The policy was made with the goal of gaining public support, but in large part failed to gain this since it met the interests of a vocal minority ("the squeaky wheel gets the oil"). Those opposing the ban include environmental groups and ecologists, and many local farmers. What will it take for practice on the ground to feed back to change this policy? If the ban on aerial culling is seen as inappropriate by so many, yet it remains in place, then what does it take for this ban to be lifted or at least maintain some flexibility in the face of crises? What if the present plans in the two parks fail to remove adequate numbers of horses? The alternatives are very limited in the absence of culling as an option.

While a major basis for the removal of horses from national parks is their ecological impact, scientific data are lacking to support the claims and there is a general lack of public awareness of their potential impacts. Scientists have found that feral horses can damage native environments by increasing soil erosion, killing vegetation, disturbing the soil and destroying native plants along frequently used routes, trampling and fouling waterholes, collapsing wildlife burrows, spreading weeds through their dung and hair, and competing with native animals for food and shelter (Andreoni 1998, Schott 2002, Jarman *et al.* 2003, Berman and Jarman 1988, Dyring 1990). However, collection of hard data to provide evidence of impacts is unlikely to help the policy debate over the horses, given that ecological impacts are not the primary concern of the two main groups calling for maintenance of their populations. The horse protection lobby is reluctant to accept ecological damage from horses and claim they require much more detail (www.savethebrumbies.org), and those neighbours who do not support the existence of the national park, cannot be expected to have concern for the ecological impacts of introduced animals within the park. Also, it is to be expected that these interest groups would view the science presented by the ecologists as biased. As outlined by Cromley (2002, p.155), we need to avoid a "misplaced faith in, and burden on science to resolve differences in management policy. Many identify value conflicts as the root cause of the problem of policy differences but then call for more science as the solution". Environmental science is struggling to build understanding of ecosystem resilience, which relates to a system's ability to adapt to change. The knowledge does not exist to answer the question of how much disturbance horses can inflict on the Park before ecosystem function changes unpredictably.

The response to the aerial horse cull has had wider ramifications for both ground and aerial shooting of other native and introduced species (such as deer and kangaroos) in the proximity of Sydney. For example, a similar situation to that in Guy Fawkes arose in Royal National Park (RNP) in the summer of 2002, when much of the park burned, resulting in most of the 3,000 Javan rusa deer in the park seeking refuge in unburnt coastal areas. An emergency meeting of stakeholders including the RSPCA, ecologists, veterinarians, NPWS, and local community members was held. All agreed that the best strategy was to reduce the deer population by shooting but politically it was a very risky exercise because of very strong public opposition to previous attempts to control deer in RNP by shooting. By the time that a Deer Management Plan based on ground shooting was approved by the Minister the deer had dispersed back into the park, competing with native species for the scarce resources. The Deer Management Plan has been put in place for removal of a significant number of deer from the park over three years, with a review of outcomes at that point. Another current debate is over management of a population of 3,000 kangaroos close to Sydney on what was the Australian Defence Industries (ADI) site. A management plan has now been approved which involves a combination of translocation and fertility control, with ground shooting being considered to be an effective but controversial option should the non-lethal options fail to be effective. These are both examples of science and politics competing in the final decision, and inevitably, politics hold the power in the proximity of large urban centres.

Top-down decision-making and community consultation versus participation

The government sought to meet the common interest in the management plan through (i) banning aerial culling (ii) involving the local community in its development and implementation, (iii) by seeking to remove horses from the park by the most humane means possible, and (iv) by allowing the public to keep and train those horses captured from the park in recognition of their heritage value. Despite this effort on the part of the government, the range of interest groups expressed dissatisfaction with the draft plan (pers. comm. with local landholders and ecologists; www.savethebrumbies.org). This raises the question of which processes are effective for resolving fundamental differences in value systems, so horse management policy can reflect the common interest amongst disparate views? The community consultation workshops were inadequate in terms of reaching consensus and the various interest groups feeling they had been represented in decisions. It may have been more effective to have held the first workshop with more realistic and achievable objectives, simply focusing on it as a debrief after the cull, with subsequent workshops held to address future management options and any broader contextual issues. However, realistically this was made more difficult due to the limitations on NPWS associated with the legal action regarding the cull.

In considering participatory processes that are effective for resolving fundamental differences in value systems, with the aim of achieving consensus in decision-making, an approach known as "community cultural development" is proving itself valuable (Mills and Brown 2004). This approach utilizes artistic and creative activities to allow expression of culture and its underpinning values. Mills and Brown document how such processes are being increasingly applied to enrich the policies and actions being taken on some of Australia's most complex environmental challenges. Significantly, these processes are valuable for building trust between government and communities, as a precondition for joint decision-making about complex issues.

"It is a constant challenge to find the appropriate balance between the level and type of participation needed to achieve consensus and attract broad commitment on one side, with the urgent need for less talk and more action on the other hand" (assessment of the GEF 2000, p.48). This statement is clearly relevant to this case study. Yet as described by O'Riordan and Stoll-Kleeman (2002), "inclusionary participation … cannot be ignored, despite the difficulties and impediments" (p.109). The approach taken in the horse management plan represents part of the evolving trend in Australia toward co-management between locals and government agencies, which can help to move beyond the division between protected conservation areas and agricultural land. However, community consultation in circumscribed workshops is often insufficient, and so-called cooperative-management regimes (Lafferty and Meadowcroft 1996), where more power is divulged to the locals both in decision-making as well as in management, may be more effective both in terms of on-the-ground control, and in terms of community satisfaction. For decision-making power to remain local or regional, it is important that promotion of policies, and effective community involvement, precede management actions which may arouse public concern, thus avoiding high profile events which invite high level political intervention. In this case study, should the government, rather than being the final arbiter of decisions, have devolved more decision-making power to the community-based steering committee? Would decisions have been different? There may have been increased support of stakeholders for the decisions made, if they had more say in the writing of the plan, and there had been less domination of the policy process by the government (as described by Hill 1997 for the organisational systems). While the steering committee worked successfully with good communication between a range of stakeholders with diverse and opposing interests, it lacked decision-making power, operating in an advisory capacity only. Decision-making remained centralised within government, operating under ministerial mandates.

Recommendations

This case analysis brought into sharp relief some of the social and political dimensions in natural resource management policy-making processes. Decision-making analysis can be useful in unlocking deadlocks and identifying where policy debates are moving in a direction which is only leading to more conflict rather than resolving it. Both the Service and the horse protection group are satisfied with progress made so far in capturing horses under the new management plan, but other stakeholders remain skeptical as to the questions which still loom large concerning the ultimate destiny of the horses and sanctuary management, and the practicality of capturing the remaining horses.

The major issues highlighted in this analysis were (1) a lack of consensus between stakeholders in definition of the problem; (2) the uneven power struggle between science and the nexus of politics, myth and the media; and (3) circumscribed community consultation with top-down decision-making. Recommendations to address decision-making weaknesses when addressing a 'wicked' problem, to produce outcomes to better meet the common interest, include the following:

- *Community participation*

  To help the planning phase to be more creative, inclusive and available, more effective means may be used to engage communities with natural resource management issues. This may include for example, moving beyond community consultation in circumscribed workshops to explore participatory processes that can resolve fundamental differences in values, and approaches that can integrate knowledge and information from a range of sources. The community cultural development approach outlined above in the final appraisal, provides a good example of this. This approach enables more equitable input, with the less vocal being heard, including those from marginalised communities and cultures. Reaching consensus on problem definition should be a key outcome of community consultation processes, which do not favour the vocal minority but enable all voices to be heard, both rational and irrational, and without predetermined outcomes.

- *Science versus politics/myth/media*

  This case study exemplified the difficulty inherent in incorporating 'scientific' knowledge into decisions influenced strongly by the deployment of strategies to win public support (politics, myth and media). Better decision processes are needed which more equally integrate the range of values and factors. Scientists having a greater systematic awareness of the overall policy process, such as demonstrated by the Wentworth Group, and actively engaging the media can be highly effective in preventing policies being sold to corporate and other vested interest groups whose values are not based in concern for sustainability. In natural resource management, there is clearly a need for scientists to engage more with political discourse and to influence the political process. Uncritical deployment of cultural icons (horses as heritage) can over-ride possibilities to engage in meaningful dialogue with both lay and scientific knowledge – where iconic status overwhelms other knowledge and values.

- *Centralised versus local decision-making power in resolving natural resource management issues*

  Early promotion of policies before implementation can prevent involvement of high-level politics which can centralise decision-making power. Keeping decision-making power decentralised and local – between the local government managing agency staff and the local communities (the people who are directly connected with the problem) can help prescription to be more rational and effective. This also encourages constructive public debate by preventing it being stifled by centralised decision-making. It is in the common interest to maintain open public debate. Thus promotion could help policy to be adopted and more effective. Rather than hope that the public will not notice what management activities are undertaken, it is safer and more democratic to be transparent, to inform the public and try to bring about a level of understanding and awareness of the need for policies.

This paper has attempted to articulate some of the pitfalls inherent in genuine efforts to take a more 'people-inclusive' approach to a national park management problem. It is widely acknowledged (e.g. O'Riordan and Stoll-Kleeman 2002) that this approach is by no means easy to achieve. Incorporating local communities more into biodiversity management decisions is a largely untried domain – it is not straightforward because "we know as little about the workings of participatory democracy as we do about the functioning of ecosystems. Opening up management to societies of interest means establishing a creative mix of 'scientific' knowledge and 'cultural' knowing that is still basically untried. There is no blueprint….This is the area of sustainability science that is most open, most contested, most sensitive to success or failure, and most ideologically impregnated" (O'Riordan 2002, p.25).

Acknowledgements

I am grateful to Tim Clark from Yale University for his advice in the application of the policy sciences framework to natural resource management issues, and for helping with drafts of this paper; to Tony English for providing the opportunity for me to study feral animal issues; to Dan Lunney for his advice and encouragement; and the numerous other people who were involved with the case, particularly Alan Jackson, with whom I had conversations and who provided feedback on drafts of this paper.

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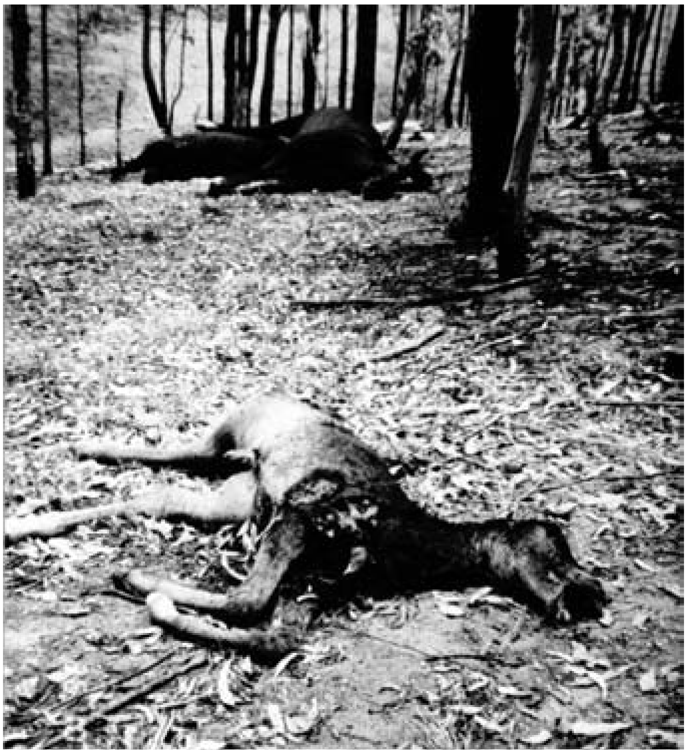
APPENDIX I



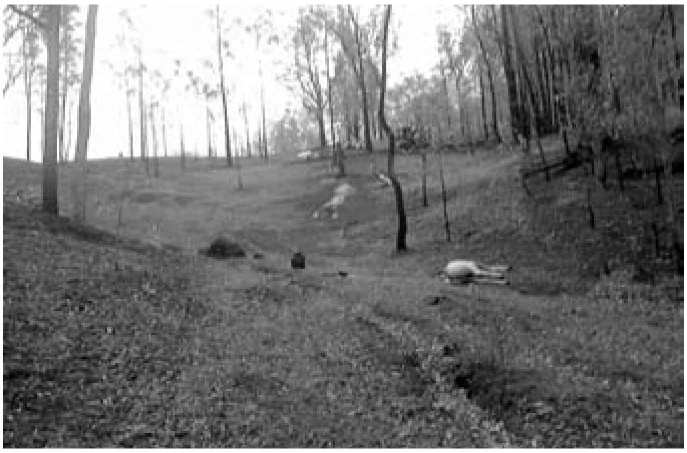
"Whistleblower" and local landowner who found evidence of the cull and notified media outlets. This is one of the photos sent to the press.

Photo: Greg Everingham,

Veterinary scientist who undertook the independent inquiry into the cull. Depicts the state of the park after bushfire and drought.

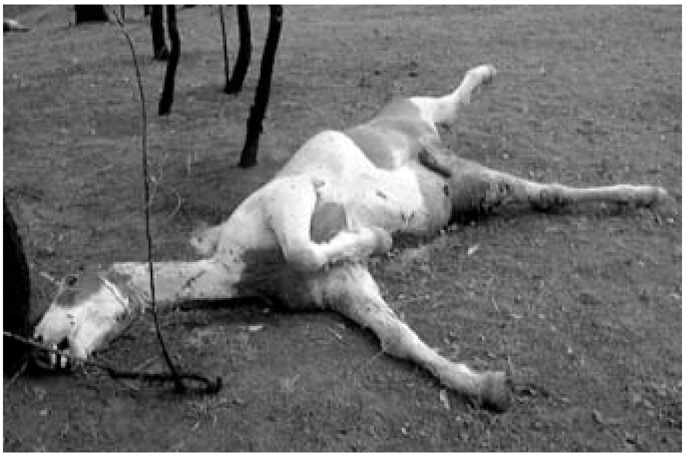
Photo: Tony English

APPENDIX I



Shot horses lying in drought-stricken and burnt landscape.

Photo: Tony English.



Horses shot during the cull.

Photos: Tony English.